

# Combination of Macronutrient Groups as Possible Aggravating Factor in Diabetes

Sometime in 2023

Simon Edwards

Research Acceleration Initiative

## Introduction

Diabetes Mellitus remains a poorly understood condition for which doctors have given contradictory treatment recommendations. It has been reported both that carbohydrates and fats are the most dangerous types of macronutrients for a diabetic to consume. Most of the available evidence points to fats as being the greater culprit, however, neither guideline takes into account how these macronutrient groups are often combined in the diets of patients.

## Abstract

The cells of the pancreas are responsible for doing more than producing insulin. While insulin is needed for metabolising simple sugars, other macronutrient groups must be digested with enzymes in order to allow for their absorption and incorporation into the body. When it comes to these complex enzymes, I propose that the pancreas has a more difficult time producing the needed enzymes to digest multiple macronutrients simultaneously than it would to produce a single enzyme at a time.

Although it is a popular misconception that early humans were purely carnivorous, it is probably true that early humans did not combine macronutrient groups. For example, if you eat a hamburger, you're consuming all three macronutrient groups at the same time as a result of the addition of the bun. Combining meat with bread is a relatively recent human culinary advancement. Early humans likely consumed meat when it was available and grain, in isolation, when meat was not available, but would not have consumed both in the same meal.

In a previous publication (*ibid.*) this author pointed out that chemical signalling which begins in the stomach's mucosa can be used to telegraph the qualities of the nutrients being consumed to the pancreas, which sits immediately below the stomach. If sugars are being consumed in large quantities, the pancreas may make large quantities of insulin in advance and may calibrate itself to produce insulin optimally at the expense of producing lipase or pancreatic amylase sub-optimally.

A universal assumption amongst today's researchers has been that the production of each of the enzymes produced by the pancreas is performed by discrete, dedicated cells. However, this thinking is likely wrong. It is much more likely that the cells which produce lipase are also responsible for producing amylase and insulin and that the production of lipase is so energy-intensive that it interferes with the ability of the pancreas to produce insulin. Short of this, it may also be possible that the performance of the production of less complex enzymes is being de-prioritized whereas the same energetic

chemical precursors are needed for all enzyme production. The pancreas, may in fact, be shunting these precursors away from the cells which produce insulin and amylase when fat is present and some individuals may be more sensitive to the chemical signalling associated with informing the pancreas that fats need to be digested than others. Those who are too sensitive may fail to produce sufficient insulin and amylase, leading to blood sugar spikes. If this hypothesis were meted out, it would call into question the very concept of "insulin resistance." I would propose that there is no such thing as insulin resistance and that the pancreas is, in fact, producing insufficient amounts of insulin (as in Type 1 Diabetes) as a consequence of metabolic exhaustion internal to the pancreas which can be exacerbated by the consumption of combinations of macronutrient groups. Some individuals may have an oversensitivity to the signalling mechanism associated with the ingestion of simple sugars and this could account for many cases of non-diabetic hypoglycemia which is triggered by the consumption of sweetened beverages without food.

## **Conclusion**

The enzyme-producing functions of the pancreas are a juggling act which some patients' pancreata are better-able to perform than others. The central malfunction in Diabetes Mellitus could better be thought of as an inability to digest multiple macronutrient groups simultaneously rather than a body-wide failure to respond to insulin. Verification of this hypothesis could be attained via fMRI as one could use this technique to look for changes to the distribution of cellular activity within the pancreas as well as the distribution of energetic precursors shortly after consuming meals featuring various macronutrient compositions.

If this is the case, Diabetes Mellitus may be addressed; particularly in the early stages; by consuming meals composed of a single macronutrient group, avoiding fats entirely and continuing to minimize the intake of simple sugars as has been protocol for quite some time. Although decades of indoctrination have suggested that meals should be balanced, I would suggest that it is not the individual meal which should be balanced, but rather the overall daily intake of food. Individual meals, counterintuitively, ought to be imbalanced i.e. they should be composed of a single macronutrient, particularly when a patient's pancreas is struggling to perform its needed functions.